CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 77-44

NPDES NO. CA0038130

WASTE DISCHARGE REQUIREMENTS FOR:

CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO
SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter Board), finds that:

1. Cities of South San Francisco and San Bruno (hereinafter discharger), by application dated February 9, 1977, has applied for renewal of waste discharge requirements and a permit to discharge wastes under the National Pollutant Discharge Elimination System.

2. The discharger presently discharges secondarily treated municipal and industrial wastewater containing pollutants into a combined outfall force main with final disposal into San Francisco Bay, a water of the United States, at a point approximately one mile north-east of Point San Bruno, (Latitude 22 deg, 39 min, 55 sec; Longitude 22 deg, 21 min, 41 sec). The discharge can affect viable shellfish beds in San Francisco Bay, located near the shoreline of Oyster Point and Point San Bruno. The same outfall facilities are presently used by Merck Chemical Company, San Francisco International Airport, and the cities of Burlingame and Millbrae.

3. The report of waste discharge describes the existing discharge as follows (Annual Average values):

Average Flow: 8.7 million gallons per day (mgd)
Design Flow: 13.0 million gallons per day (mgd)

Constituents	Milligrams per Liter	Pounds per day
BOD	44	3,192
Suspended Matter	92	6,675
Chlorine Residual	2.3	167

4. The City of South San Francisco, being the lead agency for North Bayside Dischargers, San Mateo County, has prepared a final environmental impact report for wastewater treatment facilities upgrading and dechlorination dated February 1977 in accordance with the California Environmental Quality Act (Public Resources Code Section 2100 et seq.).

5. The project as approved by the City of South San Francisco will have no adverse effect on the environment:

6. A Water Quality Control Plan for the San Francisco Bay Basin was adopted by the Board on April 8, 1975, . The Basin Plan contains water quality objectives for San Francisco Bay.

7. The beneficial uses of San Francisco Bay are:

   a. Recreation
   b. Fish migration and habitat
   c. Habitat and resting for waterfowl and migratory birds
   d. Industrial, water supply
   e. Esthetic enjoyment
   f. Navigation
   g. Shellfish propagation and harvesting for human consumption.

8. The discharge is presently governed by Waste Discharge Requirements Order Nos. 74-169 and 75-76 which allow discharge to San Francisco Bay.

9. The discharger and interested agencies and persons have been notified of the Board's intent to revise requirements for the existing discharge and have been provided with the opportunity for a public hearing and the opportunity to submit their written views and recommendations.

10. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provision of the Federal Water Pollution Control Act, as amended, and regulations and guidelines adopted thereunder, that the discharger shall comply with the following:

A. Prohibitions:

1. Discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1 is prohibited.

2. There shall be no bypass or overflow of untreated wastewater to waters of the State either at the treatment plant or from the collection system.

3. The average dry weather flow shall not exceed 13 mgd. Average shall be determined over three consecutive months each year.

B. Effluent Limitations:

1. Effluent discharged into the combined outfall shall not exceed the following limits.

Constituent	Units	30-Day Average	7-Day Average	Maximum Daily	Instantaneous Maximum
a. Settleable Matter	ml/l-hr	0.1	-	-	0.2
b. BOD[1/]	mg/l	30	45	60	-
	lbs/day	4,350	-	8,700	-
	kg/day	1,970	-	3,940	-
c. Suspended Solids[1/]	mg/l	30	45	60	-
	lbs/day	4,350	-	8,700	-
	kg/day	1,970	-	3,940	-
d. Oil & Grease	mg/l	10	-	20	-
	lbs/day	1,450	-	2,890	-
	kg/day	656	-	1,310	-
e. Chlorine Residual[2/]	mg/l	-	-	-	0.0

1/See interim effluent limitation B.6
2/Compliance with this limitation may be demonstrated at the point of discharge from the combined outfall to the receiving water.

2. The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and suspended solids values, by weight, for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period (85 percent removal).

3. The pH of the discharge shall not exceed 9.0 or be less than 6.0.

4. In any representative set of samples, the waste as discharged to the combined outfall shall meet the following limit on toxicity:*

   The survival of test fishes in 96-hour bioassays of the effluent shall be a 90 percentile value of not less than 50 percent survival. Exceptions to this limitation may be granted and revised toxicity requirements established by the Regional Board, pursuant to public hearing, if the discharger can demonstrate to the satisfaction of the Board that the following conditions are met:

   1. The waste is discharged through a deepwater outfall which achieves rapid and high initial dilution and that the waste is rapidly rendered nonacutely toxic upon discharge, and

   2. The toxicants in the waste are nonconservative constituents which are rapidly decayed in the receiving water; or the toxicants in the waste are conservative constituents for which water quality objectives have been established. The Regional Board will, in such cases, establish effluent mass emission rates for such constituents.

* Samples may be dechlorinated in the laboratory prior to testing to provide a chlorine residual equal to that of the waste in the combined outfall.

5. Representative samples of the effluent shall not exceed the following limits more than the percentage of time indicated:[3/]

Constituent	Unit of Measurement	50% of time	10% of time
Arsenic	mg/l (kg/day)	0.01(0.49)	0.02(0.98)
Cadmium	mg/l (kg/day)	0.02(0.98)	0.03(1.48)
Total Chromium	mg/l (kg/day)	0.005(0.25)	0.01(0.48)
Copper	mg/l (kg/day)	0.2(9.8)	0.3(14.8)
Lead	mg/l (kg/day)	0.1(4.9)	0.2(9.8)
Mercury	mg/l (kg/day)	0.001(0.049)	0.002(0.098)
Nickel	mg/l (kg/day)	0.1(4.9)	0.2(9.8)
Silver	mg/l (kg/day)	0.02(0.98)	0.04(1.97)
Zinc	mg/l (kg/day)	0.3(14.8)	0.5(25.)
Cyanide	mg/l (kg/day)	0.1(4.9)	0.2(9.8)
Phenolic Compounds	mg/l (kg/day)	0.5(25.)	1.0(49.)
Total Identifiable Chlorinated Hydrocarbons	mg/l (kg/day)[4/]		

3/These limits are intended to be achieved through secondary treatment, source control and application of pretreatment standards.

4/Total Identifiable Chlorinated Hydrocarbons shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, polychlorinated biphenyls, and other identifiable chlorinated hydrocarbons.

6. The following interim effluent limitations shall apply prior to achieving full compliance:

	30 day average	Maximum Daily
a. BOD	60 mg/l, maximum 6505 lbs/day	13,010 lbs/day
b. Suspended Solids	60 mg/l, maximum 6505 lbs/day	13,010 lbs/day

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place.

a. Floating, suspended, or deposited macroscopic particulate matter or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended or deposited oil or other products of petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a.	Dissolved oxygen	5.0 mg/l minimum. Annual median - 80% saturation. When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b.	Dissolved sulfide	0.1 mg/l maximum
c.	pH	Variation from natural ambient pH by more than 0.2 pH units.
d.	Un-ionized ammonia	0.025 mg/l as N Annual Median 0.4 mg/l as N Maximum
e.	Total Coliform organisms	240 MPN/100 ml, median of five consecutive samples maximum 10,000 MPN/100 ml, any single sample, maximum

D. Provisions

1. The requirements prescribed by this Order supersede the requirements prescribed by Order Nos. 74-169 and 75-45, adopted by the Board on December 6, 1974, and July 15, 1975, respectively. Order Nos. 74-169 and 75-45 are hereby rescinded.

2. The discharger shall comply with the following time schedule to assure compliance with the specifications of this Order:

a. Compliance with Effluent Limitations B.1.b, B.1.c, B.1.d, B.2. and Receiving Water Limitation C.1.a, C.1.c:

Task	Completion Date
Full Compliance	July 1, 1977

b. Compliance with Effluent Limitation B.1.e and B.4:

Task	Completion Date	Report of Compliance Due
Submit plans and specifications	September 1, 1977	September 15, 1977
Advertise for bids	November 1, 1977	November 15, 1977
Commence Construction	February 15, 1978	March 1, 1978
Complete Construction	September 15, 1978	October 1, 1978
Full Compliance	October 1, 1978	October 15, 1978

c. Compliance with effluent limitation B.5:

Task	Completion Date	Report of Compliance Due
Implementation of program for source control and program for compliance with pretreatment standards to include compliance time schedules for all industries		Quarterly
Compliance with program for source control and compliance with pretreatment standards	June 1, 1978	June 15, 1978

Documentation of compliance with December 1, 1978, December 15, 1978, effluent limitations.

This Regional Board will consider amendment of the effluent limitation B.5 if the discharger demonstrates that compliance cannot be achieved through a program acceptable to the Board for source control and pretreatment standards.

d. The discharger shall comply with all other effluent and receiving water limitations, prohibitions, and provisions of this Order immediately upon adoption.

3. If the discharger elects to document compliance with the coliform receiving water limitation exclusively in the effluent and so notifies the Board, in writing, the frequency of receiving water coliform monitoring will be reduced accordingly; PROVIDED, HOWEVER, that if such election is made, a violation of the coliform requirement in the effluent shall constitute a violation of the coliform receiving water limitation.

4. Subsequent to evaluation of receiving water monitoring data and dilution conditions. This Board will review the adequacy of these requirements to protect shellfish and consider adoption of more stringent limitations, if necessary, to protect shellfish harvesting for human consumption.

5. The discharger shall comply with the attached Self-Monitoring Program as ordered by the Executive Officer.

6. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions."

7. This Order expires April 1, 1982. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

8. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on May 17, 1977.

FRED H. DIERKER
Executive Officer

Attachment:
Reporting Requirements, Standard
Provisions, and Descriptions dated April, 1977

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO

SAN MATEO COUNTY

NPDES NO. CA0038130

ORDER NO. 77-44

SMP CONSISTS OF

PART A

AND

PART B

PART B - CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT AND INTAKE

Station	Description
A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment.

B. EFFLUENT

Station	Description
E-001	At any point in the plant's outfall from the treatment facilities between the point of discharge into the combined outfall and the point at which all waste from the treatment plant is present. (May be the same as E-001-D).
E-001-D	At any point in the disinfection facilities for Waste E-001 at which point adequate contact with the disinfectant is assured.
E-002	At any point in the combined outfall from the treatment facilities between the point of discharge into San Francisco Bay and the point at which all waste tributary to that combined outfall is present.

C. RECEIVING WATERS

Station	Description
C-1	At a point in San Francisco Bay located over the geometric center of the outfall's discharge ports.
C-2	At a point in San Francisco Bay located midway between C-1 and C-3.
C-3	At a point in San Francisco Bay located in the center of the waste plume.
C-50-SW	At a point in San Francisco Bay, located 50 feet southwesterly, along the outfall line shoreward from Station C-1.
C-50-NW	At a point in San Francisco Bay, located 50 feet northwesterly from Station C-1, normal to the outfall line.
C-50-NE	At a point in San Francisco Bay located 50 feet northeasterly from Station C-1, along the outfall line extended.

Station	Description
C-50-SE	At a point in San Francisco Bay located 50 feet southeasterly from Station C-1, normal to the outfall.
C-300-N through C-300-NW (8 stations)	At a point in San Francisco Bay located on a 300-foot radius from the geometric center of the outfall diffuser, at equidistant intervals, with Station C-300-SW located shoreward from Station C-1 at the outfall line.
C-R-NW	At a point in San Francisco Bay located approximately 1500 feet northerly from the point of discharge.
C-R-SE	At a point in San Francisco Bay, located approximately 1500 feet southeasterly from the point of discharge.

D. SEDIMENTS

Station	Description
B-1	At a point in San Francisco Bay located fifty (50) feet perpendicular to and south of the diffuser, and two hundred and fifty (250) feet landward from the end of the diffuser.
B-2	At a point in San Francisco Bay located one hundred fifty (150) feet perpendicular to and south of the diffuser, and two hundred and fifty (250) feet landward from the end of the diffuser.
B-3	At a point in San Francisco Bay located three hundred (300) feet perpendicular to and south of the diffuser, and two hundred and fifty (250) feet landward from the end of the diffuser.
B-4	At a point in San Francisco Bay located fifty (50) feet perpendicular to and south of the diffuser, and six hundred (600) feet landward from the end of the diffuser.
B-5	At a point in San Francisco Bay located one hundred fifty (150) feet perpendicular to and south of the diffuser, and six hundred (600) feet landward from the end of the diffuser.
B-RS	At a point in San Francisco Bay located approximately fifteen hundred (1500) feet south of the center of the diffuser.

E. LAND OBSERVATIONS

Station	Description
P-1 through P-'n'	Located along the periphery of the waste treatment or disposal facilities, at equidistant intervals, not to exceed 100 feet. (A sketch showing the locations of these stations will accompany each report.)

F. OVERFLOWS AND BYPASSES

Station	Description
OV-1 through OV-'n'	Bypass or overflows from manholes, pump stations, or collection system.

NOTE: Initial SMP report to include map and description of each known bypass or overflow location.

Reporting - Shall be submitted monthly and include date, time, and period of each overflow or bypass.

II. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given as Table I.

III. MODIFICATION OF PART "A" DATED 7/74

A. Exclusions: Paragraph C-3

I, Fred H. Dierker, Executive Officer, do hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 74-172.

2. Has been ordered by the Executive Officer on May 17, 1977, and becomes effective immediately.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.

FRED H. DIERKER
Executive Officer

Attachments:
Table I and Legend for Table

TABLE I

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A-001	E-001			E-001-D			E-002			All C Stn.	All B Stn.	All P Stn.
TYPE OF SAMPLE	C-24	G	C-24	Cont	G	C-24	Cont	G	C-24	Cont	G	BS	O
Flow Rate (mgd)	D			D									
BOD, 5-day, 20° C, or COD (mg/l & kg/day)	5/W		5/W						5/W				
Chlorine Residual & Dosage (mg/l & kg/day)					2H	or	Cont						
Settleable Matter (ml/1-hr. & cu. ft./day)		D						5/W					
Total Suspended Matter (mg/l & kg/day)	5/W		5/W						5/W				
Oil & Grease (mg/l & kg/day)		2W [2]						2M [2]					
Coliform (Total) (MPN/100 ml) per req't								5/W			3/4/ 2/M		
Fish Toxicity, 96-hr. TL_{50} % Survival in undiluted waste						M			M				
Total Ammonia (mg/l & kg/day)									2W		3M	4/	
Nitrate Nitrogen (mg/l & kg/day)									2W		3M	4/	
Nitrite Nitrogen (mg/l & kg/day)									2W		3M	4/	
Total Organic Nitrogen (mg/l & kg/day)									2W		3M	4/	
Total Phosphate (mg/l & kg/day)									2W		3M	4/	
Turbidity (Jackson Turbidity Units)			5/W						W		2/M		
pH (units)		D						D			2/M		
Dissolved Oxygen (mg/l and % Saturation)		D						D			2/M		
Temperature (°C)		D						D			2/M		
Apparent Color (color units)			2/M						W		2/M		
Secchi Disc (inches)											2/M		
Sulfides (if DO < 5.0 mg/l) Total & Dissolved (mg/l)		2/W						D			2/M		
Arsenic (mg/l & kg/day)			3M										
Cadmium (mg/l & kg/day)			3M										
Chromium, Total (mg/l & kg/day)			3M										
Copper (mg/l & kg/day)			3M										
Cyanide (mg/l & kg/day)			3M										
Silver (mg/l & kg/day			3M										
Lead (mg/l & kg/day)			3M										

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A-001	E-001			E-001-D			E-002			All C Stn.	All B Stn.	All P Stn.	All OV Stn
TYPE OF SAMPLE	C-24	G	C-24	Cont	G	C-24	Cont	G	C-24	Cont	G	BS	O	
Mercury (mg/l & kg/day)			3M											
Nickel (mg/l & kg/day)			3M											
Zinc (mg/l & kg/day)			3M											
PHENOLIC COMPOUNDS (mg/l & kg/day)			3M											
All Applicable Standard Observations		D						D			2/M		2/W	E
Bottom Sediment Analyses and Observations												2/Y		
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)			3M											
Non-dissociated Ammonium Hydroxide as N (mg/l)											3M	6/		

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
C-X = composite sample - X hours (used when discharge does not continue for 24-hour period)
Cont = continuous sampling
DI = depth-integrated sample
BS = bottom sediment sample
O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
A = treatment facility influent stations
E = waste effluent stations
C = receiving water stations
P = treatment facilities perimeter stations
L = basin and/or pond levee stations
B = bottom sediment stations
G = groundwater stations
OV = Overflows and Bypasses

FREQUENCY OF SAMPLING

E = each occurence
H = once each hour
D = once each day
W = once each week
M = once each month
Y = once each year

2/H = twice per hour
2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month
2/Y = once in March and once in September
Q = quarterly, once in March, June, Sept. and December

2H = every 2 hours
2D = every 2 days
2W = every 2 weeks
3M = every 3 months
Cont = continuous

1/ During any day when bypassing occurs from any treatment unit(s) in the plant, the monitoring program for the effluent shall include the following in addition to the above schedule for sampling, measurement and analyses:

1. Composite sample for BOD, Total Suspended Solids, Oil and Grease (Influent & Effluent)
2. Grab sample for Coliform (Total and Fecal), Settleable Matter, and Chlorine Residual (continuous or every two hours)
3. Continuous monitoring of flow

2/ Oil and Grease sampling shall consist of 3 grab samples taken at 8-hour intervals during the sampling day, with each grab being collected in a glass container and analyzed separately. Results for station E-001 shall be expressed as a weighted average of the 3 values, based upon the instantaneous flow rates occurring at the time of each grab sample. Results for station E-002 shall be expressed as a simple average of the three values. If the plant is not staffed 24 hours per day or if the discharge does not occur continuously, then the three grab samples may be taken at approximately equal intervals during the period that the plant is staffed or during the period that discharge is made.

In the event that sampling for oil and grease once every two weeks or less frequently shows an apparent violation of the waste discharge permit, 30-day average limitation (considering the results of one or two day's sampling as a 30-day average), then the sampling frequency shall be increased to weekly so that a true 30-day average can be computed and compliance can be determined. This provision does not apply to cases in which effluent oil and grease limitations are not currently in effect (under a time schedule for compliance).

3/ 5 samples per station each day

4/ stations C-1,2,3, CR-NW & CR-SE ONLY